

not, as in the Sloths, to carry the animal to the food, but to bring the food within the reach of the animal, by uprooting the trees on which it grew.

In the remains of the Megatherium we have evidence of the frame-work of a quadruped equal to the task of undermining and hawling down the largest members of a tropical forest. In the latter operation it is obvious that the immediate application of the anterior extremities to the trunk of the tree would demand a corresponding fulcrum, to be effectual, and it is the necessity for an adequate basis of support and resistance to such an application of the fore-extremities which gives the explanation to the anomalous development of the pelvis, tail, and hinder extremities in the Megatherioid quadrupeds. No wonder, therefore, that their type of structure is so peculiar; for where shall we now find quadrupeds equal, like them, to the habitual task of uprooting trees for food?

DESCRIPTION OF FRAGMENTS OF BONES, AND OF OSSEOUS TESSELATED DERMAL COVERING OF LARGE EDENTATA.

It is now determined that there once existed in South America, besides the Megatherium, the Megalonyx, and the allied genera described in the preceding pages of the present work, gigantic species of the order *Bruta* belonging to the Armadillo family, and defended, like the small existing representatives of that family, by a tessellated bony dermal covering. The largest known species of these extinct *Dasypodidæ* is the *Glyptodon clavipes*, of which the armour and parts of the skeleton have been described by MM. Weiss and D'Alton in the Berlin Transactions for 1827 and 1834: and the generic and specific characters and name, with an account of the dental system, and bones of the extremities, were recorded in the Geological Proceedings for March 1839. It would seem that parts of the same, or a nearly allied gigantic species were described in the same year by M. Lund; under the name of *Hoplophorus*. Of the valuable and interesting discoveries of this able Naturalist I regret that I was not aware until the appearance of a notice of them in the Comptes Rendus for April, 1839.* Amongst the fragments of bony tessellated armour in Mr. Darwin's collection are a few pieces which were found by him, associated with remains of *Toxodon* and *Glossotherium* near the Rio Negro in Banda Oriental.† These fragments, if we may judge from their thickness, must have belonged to an animal at least as

* An excellent translation of the description of the Brazilian fossils found by M. Lund, is published in the Annals of Natural History, July and August, 1839.

† At the distance of a few leagues from the locality here mentioned, other fragments were found by Mr. Darwin; also near Santa Fé, in Entre Rios; also on the shores of the Laguna, near the Guardia del Monte, South of Buenos Ayres; also, according to the Jesuit Falkner, on the banks of the Tercero.

large as the *Glyptodon clavipes*; but the pattern differs in the greater equality of size of the component tesserae. The thickness of the largest fragment is one inch and a half, the tesserae vary in diameter from one inch to half an inch, and are separated by grooves about two lines in depth, and two in diameter. The pattern formed by the anastomosis of these grooves is an irregular net-work; the contour of the tesserae is either unevenly subcircular, hexagonal, pentagonal, or even four-sided; with the sides more or less unequal. In those portions of this armour, where one of the tesserae exceeds the contiguous ones in size, the imagination may readily conceive it to be the centre of a rosette, around which the smaller ones arrange themselves, but there is no regular system of rosettes, as in the portions of the dermal armour of the *Glyptodon* figured by Weiss, and those brought to England by Sir Woodbine Parish, in which the central piece is double the size of the marginal ones.

The portions of the tessellated bony dermal covering of a *Dasypodoid* quadruped, figured in Pl. XXXII. figs. 5 and 4, of the natural size, were discovered folded round the middle and ungual phalanges, figs. 2 and 3, at Punta Alta, in Bahia Blanca, in an earthy bed interstratified with the conglomerate containing the remains of the fossil Edentals.

In one of these fragments, measuring six inches long by five broad, the tesserae are arranged in rosettes, and so closely correspond in size and pattern with the bony armour described by M. Lund, as characterizing his species, *Hoplophorus euphractus*, that I feel no hesitation in referring them to that animal. One of the pattern rosettes is figured at fig. 4, together with the thickness of the armour at this part, and the coarse tubulo-cellular structure of the bone. Another portion of dermal armour from the same locality, gives the pattern shown in fig. 5, formed by square or pentagonal tesserae, arranged in transverse rows; it is certain that this portion of armour belonged to the same animal as the preceding piece; and probably that it constituted part of the transverse dorsal bands of the *Hoplophorus*.

The middle and ungual phalanx, as well as the portions of armour, are given of the natural size, in Pl. XXXII. The upper and outer surface of the phalanx, is shown in fig. 2. It is smooth and flat; joins the inner surface by a sharp edge, which runs along the upper and inner side of the bone; and passes by a gradual convexity to the under surface; the ridge corresponding with the base of the claw, is feebly developed at the under and lateral parts of the base of the claw. Below the double trochlear joint for the middle phalanx, there are two articular surfaces for two large sesamoid bones.

The middle phalanx corresponds in its small antero-posterior diameter and wedge-shape, with that of the great *Glyptodon*: but the terminal phalanx is longer and deeper, in proportion to its breadth.